CLAIMS

1. A honeycomb structure made by joining a plurality of honeycomb segments in each of which a plurality of cells each having a quadrilateral sectional shape are formed by being defined by a plurality of partition walls which are at right angles to each other, characterized in that at least some of honeycomb segments constituting at least a portion of the outer periphery of the honeycomb structure have a structure in which compression strength is larger than that of the honeycomb segments constituting the other portions of the honeycomb structure.

2. The honeycomb structure according to claim 1, wherein the honeycomb segments being disposed to at least a portion of the honeycomb segments constituting the outer periphery of the honeycomb structure and in which the partition walls in the partition wall length direction on a cross section perpendicular to the fluid passage direction of a cell form an angle of 20 to 70° with respect to a tangent to the outer periphery of the honeycomb structure at the positions where the respective partition walls contact with an outer peripheral wall, have a structure in which the compression strength is larger than that of the honeycomb segments constituting the other portions of the honeycomb structure.

3. The honeycomb structure according to claim 1 or 2, wherein the honeycomb segments being disposed to at least a portion of the honeycomb segments constituting the outer periphery of the honeycomb structure and in which the partition

walls in the partition wall length direction on a cross section perpendicular to the fluid passage direction of a cell form an angle of 20 to 70° with respect to a tangent to the outer periphery of the honeycomb structure at the positions where the respective partition walls contact with an outer peripheral wall, have a structure which comprises partition walls having an average partition wall thickness larger than the honeycomb segments constituting the other portions of the honeycomb structure.

4. The honeycomb structure according to any one of claims 1 to 3, wherein the honeycomb segments being disposed to at least a portion of the honeycomb segments constituting the outer periphery of the honeycomb structure and in which the partition walls in the partition wall length direction on a cross section perpendicular to the fluid passage direction of a cell form an angle of 20 to 70° with respect to a tangent to the outer periphery of the honeycomb structure at the positions where the respective partition walls contact with an outer peripheral wall, have a structure which comprises partition walls having an average porosity smaller than the honeycomb segments constituting the other portions of the honeycomb structure.

5. The honeycomb structure according to any one of claims ·1 to 4, wherein the honeycomb segments being disposed to at least a portion of the honeycomb segments constituting the outer periphery of the honeycomb structure and in which the partition walls in the partition wall length direction on a cross section perpendicular to the fluid passage direction of a cell form an

angle of 20 to 70° with respect to a tangent to the outer periphery of the honeycomb structure at the positions where the respective partition walls contact with an outer peripheral wall, have a cell density larger than the honeycomb segments constituting the other portions of the honeycomb structure.

6. The honeycomb structure according to any of claims 1 to 5, wherein the honeycomb segments being disposed to at least a portion of the honeycomb segments constituting the outer periphery of the honeycomb structure and in which the partition walls in the partition wall length direction on a cross section perpendicular to the fluid passage direction of a cell form an angle of 20 to 70° with respect to a tangent to the outer periphery of the honeycomb structure at the positions where the respective partition walls contact with an outer peripheral wall, further includes partition walls connecting the opposing corners of the respective cells each having a rectangular sectional shape, and cells each having a triangular sectional shape in a radial direction, which are formed between the respective partition walls.

7. A honeycomb structure made by joining a plurality of honeycomb segments in each of which a plurality of cells each having a rectangular sectional shape in a radial direction are formed between partition walls which are at right angles to each other, characterized in that the outer periphery of the honeycomb structure is composed of honeycomb segments in which all the partition walls in the partition wall length direction on a cross section perpendicular to the fluid passage direction

of a cell form an angle of 0° or more to less than 20°, or more than 70° to 90° or less with respect to a tangent to the outer periphery of the honeycomb structure at the positions where the respective partition walls contact with an outer peripheral wall.